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a memory having a data structure for storing at least one recorded item of program content in association with corresponding electronic program guide information;

a file write mechanism that accesses the electronic program guide and storing electronic program guide information for the at least one recorded item of program content in the data structure of the memory;

a speech recognizer that receives a spoken request for a specific recorded item of program content and generates an input sentence corresponding to the spoken request, where the spoken request includes electronic program guide information associated with the specific recorded item of program content;

a natural language parser that receives the input sentence from the speech recognizer and identifies the electronic program guide information embodied in the input sentence, wherein said natural language parser includes a set of stored grammars that extracts meaning from said spoken request; and

a dialog system that interacts with a user to ascertain additional electronic program guide attributes for the recorded item of program content.

### REMARKS

Applicant has thoroughly reviewed the outstanding Office Action including the Examiner's remarks and the references cited therein. Claims 1 and 3-20 are now pending in the application. Claims 1 and 13 have been amended to better reflect the present invention and to address the rejection of the claims under 35 U.S.C. §103. The

amendments to the claims contained herein are of equivalent scope as originally filed, and thus, are not narrowing amendments. The Examiner is respectfully requested to reconsider and withdraw the rejections set forth in the Office Action in view of the amendments and remarks contained herein.

### **REJECTIONS UNDER 35 USC §103**

Claims 1, 3, 5, 6, 8, 9, 11-13, 15 and 17-20 are rejected under 35 USC §103(a) as being unpatentable over Young et al. (US 5353121) in view of Houser et al. (US 5774859). Applicant respectfully traverses this rejection.

Regarding amended claims 1 and 13, Young et al. fails to teach the speech recognizer and a natural language parser having a set of stored grammars of the present invention. It is understood that the Examiner relies on Houser to remedy the shortcomings of Young. Applicants have previously acknowledged the simple speech recognizer capabilities of Houser. Again, Applicants respectfully submit that Houser lacks applicant's natural language parser utilizing a stored set of grammars. This renders Houser incapable of extracting meaning from complex spoken commands. Claims 1 and 13 have been further amended to highlight this difference.

Claims 1 and 13 now include the recitation, "said natural language parser includes a set of stored grammars". With the natural language parser that includes a set of stored grammars, the Applicants' invention is operable to recognize full or loosely structured sentences from the user and extract the meaning from those sentences with the set of stored grammars. Houser fails to teach or suggest a natural language parser and further fails to teach or suggest a set of stored grammars.

In contrast, Houser provides a terminal unit that receives the command from the user and compares the spoken command with phonemic or template vocabulary data representing the command vocabulary in order to recognize and execute the command. (Col. 7, lines 25-60) Thus Houser is performing simple word spotting. If the user utters a phonemic sequence stored in Houser's vocabulary data, the system will interpret that as a command. In this regard, Houser describes a main processor that uses phonemic definitions to compare the sounds or words spoken by the user with the phonemic or template vocabulary data that is stored in memory to recognize the command. (Col. 15 lines 42-63)

The problem with Houser is that it has no stored set of grammars with which to understand the meaning or semantics of uttered sentences. Thus, Houser (which relies on simple word spotting) would have difficulty distinguishing between the following two commands:

1. "Tonight, I'd like to watch a comedy, please." [word spotting identifies "comedy" as user's desired selection.]
2. "Tonight, I'd like to watch anything but comedy, please." [word spotting identifies "comedy" as user's desired selection.]

To further illustrate this difference, and the reasons why Houser fails, the Examiner is respectfully requested to examine the attached drawings illustrating some of the differences between Applicant's system (Fig. 1) and that of Houser (Fig. 2).

In Applicant's system the speech recognizer receives the spoken utterance and converts it to text. Presumably, Houser's system would do the same thing. However, at this point the two systems differ radically. Applicant's system examines the text using its

natural language parser with set of stored grammars to extract the meaning of the utterance. Using the stored grammars, the applicant's natural language parser determines from the sentence structure that the user does NOT want to access comedy material.

In contrast, the Houser system, which simply performs word spotting, identifies "comedy" as a preprogrammed category of content, while ignoring the sentence structure of the user's utterance. Thus Houser will incorrectly infer that the user WANTS to watch comedy, simply because he or she used that word in the utterance. The uttered phrase, "anything but" would add no meaning to Houser's system because Houser has no stored grammars with which to understand the sentence structure, and hence meaning, of the utterance.

In view of this significant difference between, Applicants system and the references of record, Applicants respectfully submit that the rejections under §103(a) are traversed for independent claims 1 and 13 and all dependent claims corresponding thereto.

### **CONCLUSION**

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Prompt and favorable consideration of this amendment is respectfully requested. If the Examiner

believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: Jan 2, 2002

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## **ATTACHMENT FOR SPECIFICATION AMENDMENTS**

The following is a marked up version of each replacement paragraph and/or section of the specification in which underlines indicates insertions and brackets indicate deletions.

1. (Thrice Amended) An interactive replay system for organizing recorded items of program content, the system having access to an electronic program content, comprising:

a memory having a data structure for storing at least one recorded item of program content in association with at least one electronic program guide attribute selected from the group consisting of program title information, program category, broadcasting network, date of broadcast, time of broadcast, actors and director;

a file write mechanism that automatically accesses the electronic program guide attribute information about the recorded item of program content to be stored in said data structure;

a speech recognizer that receives a spoken request for the recorded item of program content and generates an input sentence corresponding to the spoken request, where the spoken request includes at least one electronic program guide attribute associated with the recorded item of program content;

a natural language parser that receives the input sentence from the speech recognizer and identifies the at least one electronic program guide

attribute from the input sentence, wherein said natural language parser includes a set of stored grammars that extracts meaning from said spoken request ; and

a dialog system that interacts with a user to ascertain additional electronic program guide attributes for the recorded item of program content.

13. (Thrice Amended) An interactive replay system for accessing recorded items of program content, comprising:

an electronic program guide for storing electronic program guide information for items of program content;

a memory having a data structure for storing at least one recorded item of program content in association with corresponding electronic program guide information;

a file write mechanism that accesses the electronic program guide and storing electronic program guide information for the at least one recorded item of program content in the data structure of the memory;

a speech recognizer that receives a spoken request for a specific recorded item of program content and generates an input sentence corresponding to the spoken request, where the spoken request includes electronic program guide information associated with the specific recorded item of program content;

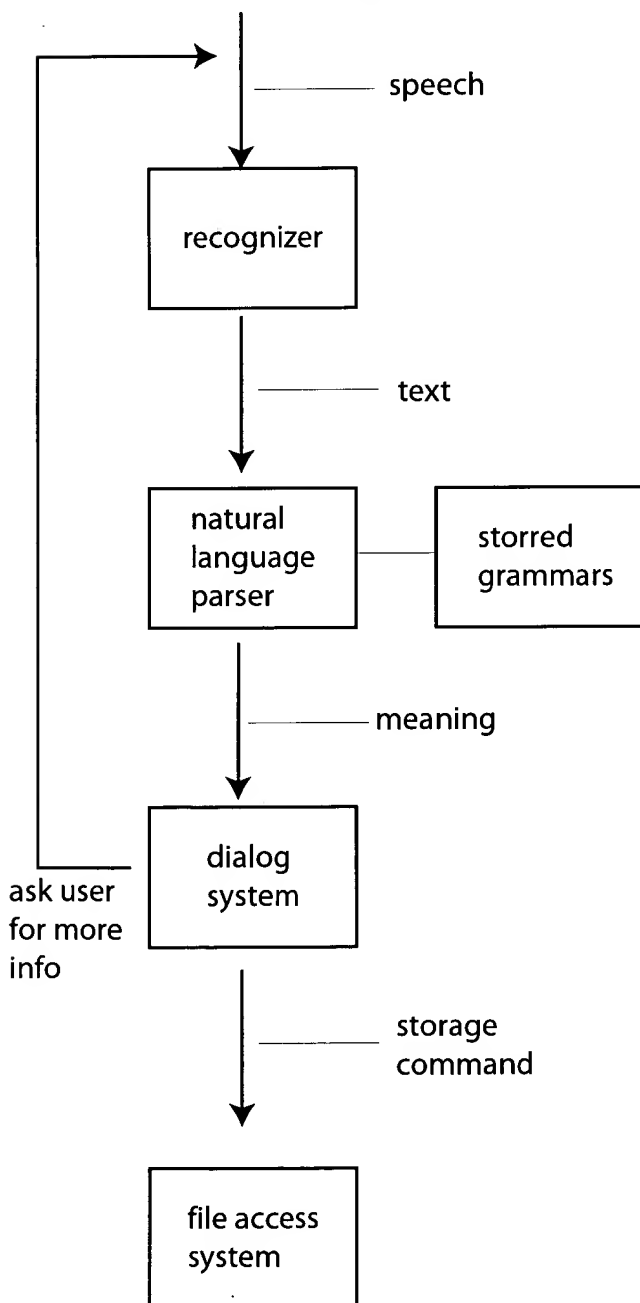
a natural language parser that receives the input sentence from the speech recognizer and identifies the electronic program guide information

embodied in the input sentence, wherein said natural language parser includes a set of stored grammars that extracts meaning from said spoken request; and  
a dialog system that interacts with a user to ascertain additional electronic program  
guide attributes for the recorded item of program content.



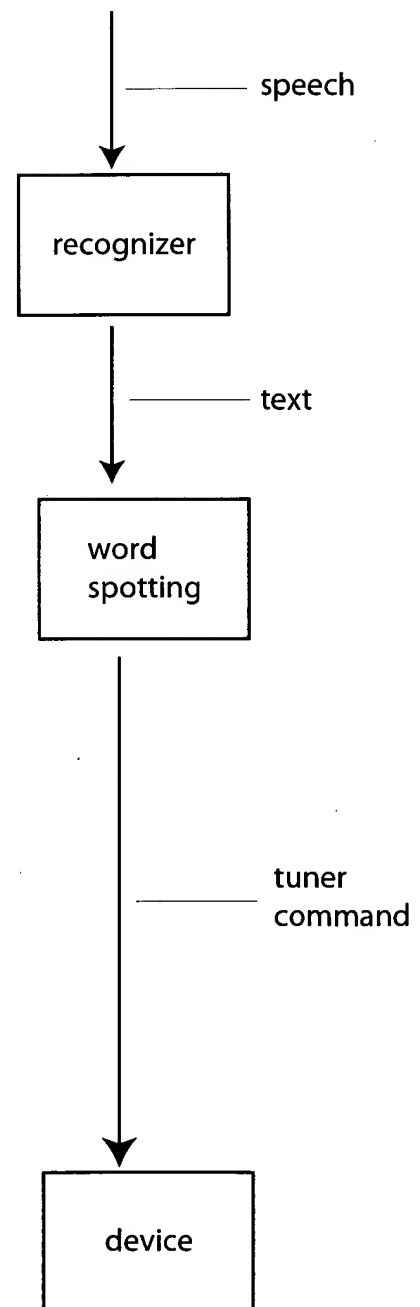
User utters:  
"... anything  
but comedy, please."

**Figure 1**  
**Applicant's System**



Applicant's system  
excludes comedy.

**Figure 2**  
**Houser's System**



Houser's system  
selects nothing *but* comedy.